

PHOTOCOUPLER, PHOTOCOUPLER ARRAY AND PHOTOELECTRIC SENSOR

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Abstract

PURPOSE: To provide a photocoupler which has a high coupling efficiency between a light emitting element and optical fiber by correcting the aberration of the optical system.
CONSTITUTION: The light projection side of a transparent resin package 5 wherein a light emitting chip 3 is sealed is formed into an almost hemispheric shape. A metal evaporation film 6 is formed thereon to obtain a concave reflecting surface 7. A focusing non-spheric lens surface 8 whose curvature is smaller in the peripheral area than in proximity to the center of the optical axis, is formed on the opposite face of the transparent resin package 5. The end of an optical fiber 2 is allowed to face the non-spheric lens surface 8 of the transparent package 5 with a space 9 placed between them. Light projected from the light emitting chip 3 is reflected by the concave reflecting surface 7. After its comatic aberration is corrected, the light passes through the space 9, and then it is focused on the end of the optical fiber 2.

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